



## Interactive short-term effects of equivalent temperature and air pollution on human mortality in Berlin and Lisbon

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### Abstract:

There is substantial evidence that both temperature and air pollution are predictors of mortality. Thus far, few studies have focused on the potential interactive effects between the thermal environment and different measures of air pollution. Such interactions, however, are biologically plausible, as (extreme) temperature or increased air pollution might make individuals more susceptible to the effects of each respective predictor. This study investigated the interactive effects between equivalent temperature and air pollution (ozone and particulate matter) in Berlin (Germany) and Lisbon (Portugal) using different types of Poisson regression models. The findings suggest that interactive effects exist between air pollutants and equivalent temperature. Bivariate response surface models and generalised additive models (GAMs) including interaction terms showed an increased risk of mortality during periods of elevated equivalent temperatures and air pollution. Cold effects were mostly unaffected by air pollution. The study underscores the importance of air pollution control in mitigating heat effects.

**Source:** <http://dx.doi.org/10.1016/j.envpol.2013.06.002>

### Resource Description

#### Exposure :

weather or climate related pathway by which climate change affects health

Air Pollution, Temperature, Other Exposure

**Air Pollution:** Interaction with Temperature, Ozone, Particulate Matter

**Temperature:** Extreme Cold, Extreme Heat

**Other Exposure:** Universal Thermal Climate Index

#### Geographic Feature:

resource focuses on specific type of geography

Urban

#### Geographic Location:

resource focuses on specific location

# Climate Change and Human Health Literature Portal

Non-United States

**Non-United States:** Europe

**European Region/Country:** European Country

**Other European Country :** Germany; Portugal

**Health Impact:** 

specification of health effect or disease related to climate change exposure

Morbidity/Mortality

**Resource Type:** 

format or standard characteristic of resource

Research Article

**Timescale:** 

time period studied

Time Scale Unspecified